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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/524,406	09/23/2005	Ralf Muckel	DE020190US	4836
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EXAMINER WALFORD, NATALIE K				
ART UNIT		PAPER NUMBER		
2879				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/524,406

**Applicant(s)**

MUCKEL ET AL.

**Examiner**

NATALIE K. WALFORD

**Art Unit**

2879

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 September 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 and 17-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 and 17-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 September 2005 and 20 November 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsman's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Response to Amendment***

The Amendment, filed on September 15, 2008, has been entered and acknowledged by the Examiner. Claims 1-15 and 17-22 are pending in the instant application.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 6-8, 11-15, 17-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Thorington et al. (US 2,806,968).

Regarding claim 1, Thorington discloses a mercury-free gas discharge lamp (item 11) in figures 1 and 3 comprising: an inner vessel (item 12) including electrodes (items 25 and 27) for providing a discharge arc; and an outer bulb (item 22), wherein a surface of at least one of the inner vessel and the outer bulb comprises a pattern (items 35 and 39) configured to increase a diffuseness of the discharge arc, wherein the pattern includes structured arrangements formed on the surface (see FIG. 3), the structured arrangements physically overlapping over each so that a first structured arrangement is in physical contact with a second structured arrangement (see FIG. 3).

Regarding claim 6, Thorington discloses the mercury-free gas discharge lamp as claimed in claim 1, wherein the at least one of the inner vessel and the outer bulb is made of at least one of glass and ceramic materials (column 3, line 22).

Regarding claim 7, Thorington discloses the mercury-free gas discharge lamp as claimed in claim 1, wherein the at least one of the inner vessel and the outer bulb has the pattern at least one of on its outer surface facing away from the discharge arc, on its outer surface facing the discharge arc, and within the inner vessel or bulb material (see FIG.3).

Regarding claim 8, the claim is directed to the method of manufacturing a mercury-free gas discharge lamp, in view of an absence of a showing that the method imparts distinctive structural characteristics to the final product, the limitations directed to the method of manufacturing are not germane to the issue of patentability of the device.

Regarding claim 11, Thorington discloses the mercury-free gas discharge lamp of claim 1, wherein the pattern is further configured to provide an optical impression when viewed from an exterior of the mercury-free gas discharge lamp, the optical impression showing a change in a viewed position of a brightest spot of the discharge arc despite lack of an actual change of an actual position of the brightest spot within the mercury-free gas discharge lamp (see FIG. 3 and column 4, lines 60-62).

Regarding claim 12, Thorington discloses the mercury-free gas discharge lamp of claim 1, wherein the pattern is further configured to not change an actual position of a brightest spot of the discharge arc and yet provide an optical impression showing a perceived change in a perceived position of a brightest spot when viewed from an exterior of the mercury-free gas discharge lamp (see FIG. 3 and column 4, lines 60-62).

Regarding claim 13, Thorington discloses the mercury-free gas discharge lamp of claim 1, wherein the pattern includes at least one of lines, dots, circles, rectangles, and polygons (see FIG. 3).

Regarding claim 14, Thorington discloses the mercury-free gas discharge lamp of claim 13, wherein the lines includes at least one of straight, curved, wavy, and spiraling lines (see FIG. 3).

Regarding claim 15, Thorington discloses the mercury-free gas discharge lamp of claim 13, wherein the structured arrangements are at least one of same and different sizes, and are partly or fully planar in shape (see FIG. 3).

Regarding claim 17, Thorington discloses the mercury-free gas discharge lamp of claim 1, wherein the structured arrangements are at least one of partly and fully planar (see FIG. 3).

Regarding claim 18, Thorington discloses a discharge lamp comprising: an inner vessel (item 12) including electrodes (items 25 and 27) for providing a discharge arc; and an outer bulb (item 22), wherein at least one of the inner vessel and the outer bulb comprises a pattern (items 35 and 39) configured to increase a diffuseness of the discharge arc, wherein the pattern includes structured arrangements formed on the surface (see FIG. 3), the structured arrangements being physically overlapping over each other so that a first structured arrangement is in physical contact with a second structured arrangement (see FIG. 3).

Regarding claim 19, Thorington discloses the discharge lamp of claim 18, wherein the pattern is further configured to provide an optical impression when viewed from an exterior of the discharge lamp, the optical impression showing a change in a viewed position of a brightest

spot of the discharge arc despite lack of an actual change of an actual position of the brightest spot within gas discharge lamp (see FIG. 3 and column 4, lines 60-62).

Regarding claim 20, Thorington discloses the discharge lamp of claim 18, wherein the pattern is further configured to not change an actual position of a brightest spot of the discharge arc and yet provide an optical impression showing a perceived change in a perceived position of a brightest spot when viewed from an exterior of the discharge lamp (see FIG. 3 and column 4, lines 60-62).

Regarding claim 21, Thorington discloses the discharge lamp of claim 1, wherein the pattern includes homogeneously overlapping rings arranged in at least one of row and columns (see FIG. 3) formed by at least one of a laser treatment, sandblasting, surface etching, surface slitting and roughening.

Regarding claim 22, Thorington discloses the discharge lamp of claim 18, wherein the pattern includes homogeneously overlapping rings arranged in at least one of row and columns (see FIG. 3) formed by at least one of a laser treatment, sandblasting, surface etching, surface slitting and roughening.

Regarding claims 21-22, the claim is directed to the method of manufacturing a mercury-free gas discharge lamp, in view of an absence of a showing that the method imparts distinctive structural characteristics to the final product, the limitations directed to the method of manufacturing are not germane to the issue of patentability of the device.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thorington et al. (US 2,806,968) in view of Whitman et al. (US 5,723,937).

Regarding claim 2, Thorington discloses the mercury-free gas discharge lamp as claimed in claim 1, but does not expressly disclose that the pattern is configured to increase the diffuseness of the discharge arc of the mercury-free gas discharge lamp by 0.01 mm up to 1.5 mm in comparison with a corresponding gas discharge lamp without the pattern, as claimed by Applicant. Whitman is cited to show in figure 4, a gas discharge lamp that increases diffuseness of a discharge arc due to a pattern by 0.01 mm up to 1.5 mm. Whitman teaches that total transmittance should be as high as possible and can be readily achieved over a wide range of coating thicknesses (column 6, line 53 thru column 7, line 17).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Thorington's invention to include the pattern is configured to increase the diffuseness of the discharge arc of the mercury-free gas discharge lamp by 0.01 mm up to 1.5 mm in comparison with a corresponding gas discharge lamp without the pattern as suggested by Whitman for achieving high total transmittance.

Regarding claim 3, Thorington discloses the mercury-free gas discharge lamp as claimed in claim 1, but does not expressly disclose that the pattern is configured to reduce the discharge

arc curvature of the mercury-free gas discharge lamp by 0.01 mm up to 0.5 mm in comparison with a corresponding gas discharge lamp without the pattern, as claimed by Applicant. Whitman is cited to show in figure 4, a gas discharge lamp that reduces the discharge arc curvature due to a pattern by 0.01 mm to 0.5mm. Whitman teaches that total transmittance should be as high as possible and can be readily achieved over a wide range of coating thicknesses (column 6, line 53 thru column 7, line 17).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Thorington's invention to include the pattern is configured to reduce the discharge arc curvature of the mercury-free gas discharge lamp by 0.01 mm up to 0.5 mm in comparison with a corresponding gas discharge lamp without the pattern as suggested by Whitman for achieving high total transmittance.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Thorington et al. (US 2,806,968) in view of Born et al. (US 6,137,230).

Regarding claim 4, Thorington discloses the mercury-free gas discharge lamp as claimed in claim 1, but does not expressly disclose that the mercury-free gas discharge lamp is at least one of a mercury-free high-pressure gas discharge lamp, and a mercury-free xenon high-pressure gas discharge lamp, as claimed by Applicant. Thorington does disclose that the gas discharge lamp contains mercury (column 1, lines 15-18). However, Born is cited to show a mercury-free gas discharge lamp in figure 1. Born teaches that lamps should be mercury free because mercury forms a heavy burden on the environment if it should be released (column 1, lines 39-45).



Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Thorington's invention to include the mercury-free gas discharge lamp is at least one of a mercury-free high-pressure gas discharge lamp, and a mercury-free xenon high-pressure gas discharge lamp as suggested by Born for protecting the environment.

Claims 5 and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thorington et al. (US 2,806,968).

Regarding claim 5, Whitman discloses the mercury-free gas discharge lamp as claimed in claim 1, but does not expressly disclose that the light losses of the mercury-free gas discharge lamp as compared with a gas discharge lamp without the pattern amount to 90 lumens and  $> 5$  lumens, as claimed by Applicant. Thorington does disclose though, that the pattern has been found to be more efficient in scattering (column 4, lines 63-68). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the light losses of the mercury-free gas discharge lamp as compared with a gas discharge lamp without the pattern amount to 90 lumens and  $> 5$  lumens, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.

Regarding claim 9, Whitman discloses the mercury-free gas discharge lamp as claimed in claims 1, but does not expressly disclose that the pattern covers a surface area of  $2 \text{ mm}^2$  to  $12 \text{ mm}^2$ , said surface area being arranged over a brightest spot in the discharge arc, as claimed by Applicant. Thorington does disclose though that the pattern covers a surface (column 1, lines 39-

45). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the pattern covers a surface area of  $2\text{ mm}^2$  to  $12\text{ mm}^2$ , said surface area being arranged over a brightest spot in the discharge arc, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.

Regarding claim 10, Whitman discloses the mercury-free gas discharge lamp as claimed in claim 1, but does not expressly disclose that the mercury-free gas discharge lamp is configured for motor vehicles, as claimed by Applicant. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the mercury-free gas discharge lamp configured for motor vehicles, since it is known in the art that discharge lamps are commonly used in motor vehicles in the headlight.

### *Response to Arguments*

Applicant's arguments with respect to claims 1-15 and 17-22 have been considered but are moot in view of the new ground(s) of rejection.

### *Conclusion*

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Natalie K. Walford whose telephone number is (571)-272-6012. The examiner can normally be reached on Monday-Friday, 8 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571)-272-2457. The fax phone number for the organization where this application or proceeding is assigned is (571)-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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